Adding New Hardware to Avaya™ MCC1, SCC1, and G600 Media Gateways

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Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following website:
http://www.avaya.com/support

Preventing Toll Fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

How to Get Help

For additional support telephone numbers, go to the Avaya Web site:
http:/www.avaya.com/support/

If you are:

- Within the United States, click *Escalation Lists*, which includes escalation phone numbers within the USA.
- Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

Standards Compliance

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

Safety of Information Technology Equipment, IEC 60950, 3rd Edition including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.

Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition

Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997

One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998

The equipment described in this document may contain Class 1 LASER Device(s). These devices comply with the following standards:

- EN 60825-1, Edition 1.1, 1998-01
- 21 CFR 1040.10 and CFR 1040.11.

The LASER devices operate within the following parameters:

- Maximum power output: -5 dBm to -8 dBm
- Center Wavelength: 1310 nm to 1360 nm

Luokan 1 Laserlaite
Klass 1 Laser Apparat

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposures. Contact your Avaya representative for more laser product information.

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards and all relevant national deviations:

Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11
- Powerline Harmonics IEC 61000-3-2
- Voltage Fluctuations and Flicker IEC 61000-3-3

Federal Communications Commission Statement

Part 15:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- answered by the called station,
- answered by the attendant, or
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user.

This equipment returns answer-supervision signals on all direct inward dialed (DID) calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered.
- A busy tone is received.
- A reorder tone is received.

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following table.

Manufacturer's Port Identifier	**FIC Code**	**SOC/REN/ A.S. Code**	**Network Jacks**
Off/On premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2-T	0.0B	RJ2GX, RJ21X
CO trunk	02GS2	0.3A	RJ21X
CO trunk	02LS2	0.3A	RJ21X
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9-BN, 1KN, 1SN	6.0F	RJ48C, RJ48M
120A2 channel service unit	04DU9-DN	6.0Y	RJ48C

If the terminal equipment (for example, the media server or media gateway) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242-2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

It is recommended that repairs be performed by Avaya certified technicians.

The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

This equipment, if it uses a telephone receiver, is hearing aid compatible.

Canadian Department of Communications (DOC) Interference Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

DECLARATIONS OF CONFORMITY

United States FCC Part 68 Supplier's Declaration of Conformity (SDoC)

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site:
http://www.avaya.com/support

All Avaya media servers and media gateways are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at:
http://www.part68.org/

by conducting a search using "Avaya" as manufacturer.

European Union Declarations of Conformity

CE

Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Europeénne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC). This equipment has been certified to meet CTR3 Basic Rate Interface (BRI) and CTR4 Primary Rate Interface (PRI) and subsets thereof in CTR12 and CTR13, as applicable.

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site:
http://www.avaya.com/support

Japan

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

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Attention: Avaya Account Management

E-mail: totalware@gwsmail.com

For the most current versions of documentation, go to the Avaya Web site:
http://www.avaya.com/support/

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Adding New Hardware to Avaya™ MCC1, SCC1, and G600 Media Gateways

This section provides information on adding hardware to Avaya™ MCC1, SCC1, and G600 Media Gateways used with an Avaya™ S8700 Media Server. To install adjunct or peripheral equipment, refer to *Installation for Adjuncts and Peripherals for Avaya™ Communication Manager.*

NOTE:
If a circuit pack requires a right-to-use fee for a particular feature, then the customer must have a license file to enable the feature.

When installing additional features or equipment, it may be necessary to install additional circuit packs. This is a general procedure to use when adding features or equipment that require adding circuit packs.

NOTE:
You must log into the *active* media server to access SAT commands. Use a terminal emulation application, such as Avaya™ Terminal Emulation, or Avaya™ Site Administration.

1. Log into the media server using a services log in.
2. Install the TN circuit pack into the media gateway or carrier (if MCC1).
3. Do the minimally required administration so that Avaya™ Communication Manager recognizes the circuit pack.
4. Log off the media server after the addition and any required administration is complete.

For information about administering circuit packs and other equipment, refer to the *Administrator's Guide for the Avaya™ Communication Manager.*

Install the Circuit Packs

CAUTION:
When adding or replacing any hardware and associated cables and adapters, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:
Circuit packs are hot-swappable, so you do not need to power down the carrier or media gateway to install them.

NOTE:
To properly seat a circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1 Insert the circuit pack into any port slot. If the slot was assigned a slot location, then put it in the assigned slot.

2 Type **list configuration all** and press **Enter** to verify that the system recognizes the newly installed circuit pack(s).

The following list shows the types of circuit packs you might be adding:

- ‘‘Install and Administer IP Connectivity Hardware’’ on page 9
- ‘‘Install and Administer Trunks and Lines’’ on page 32

Install and Administer IP Connectivity Hardware

There are several port circuit packs that are used specifically for IP connectivity. This section provides information on installing a:

- ‘‘TN799DP Control LAN’’ on page 9
- ‘‘TN2302AP IP Media Processor’’ on page 16
- ‘‘TN2501 Voice over the LAN (VAL)’’ on page 22

TN799DP Control LAN

The TN799DP Control LAN circuit pack serves two purposes:

- A connection for the signaling (telephone) network to the customer’s data network for IP telephones.
- A source board for downloading firmware to circuit packs having the P designation.
- An IP interface for adjuncts such as Intuity Audix
- An IP interface for DCS connection with another Avaya configuration.

See the *Hardware Guide for Avaya™ Communication Manager* for more information.

The following sections describe the process:

- ‘‘Check your shipment’’ on page 9
- ‘‘Install a TN799DP C-LAN’’ on page 10
- ‘‘Install the cables’’ on page 10
- ‘‘Install the circuit packs’’ on page 11
- ‘‘Administer the TN799DP’’ on page 12
- ‘‘Test the external connection to the LAN’’ on page 14

Check your shipment

When the order arrives at your site, check the contents (see ‘‘Required Hardware’’ on page 10).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in ‘‘Required Hardware’’ on page 10 for each TN799DP C-LAN circuit pack ordered.
3. Read and follow any directions inserted into the package by the factory.

Required Hardware

Comcode/Code	Description	Quantity
108525528	TN799DP Control LAN circuit pack	1 or more
848525887	Ethernet Amphenol Adapter[1]	1/C-LAN
700181118	Tight-twisted I/O cables	1/C-LAN[2]

[1]The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the network.

[2]Only if installing in old carriers or cabinets with WP cables.

Install a TN799DP C-LAN

Have the following equipment on site:

- An unoccupied port slot for the TN799DP.
- A 10 or 100 BaseT Ethernet connection into your LAN for the TN799DP.
- One or more valid, unused IP addresses on the network (one for each TN799DP C-LAN) that can be assigned to the C-LAN circuit pack. You also need the subnet mask and default gateway.

NOTE:
Get this information from the network administrator or refer to the filled-out job aid titled *Pre-Installation Network Planning Forms—S8700 Media Server.*

- An Ethernet adapter for each TN799DP.
- A CAT3 (10 Mbps) or CAT5 (100 Mbps) cable with a DW8 connector on each end.

Install the cables

1 Determine into which port slots you are putting the TN799DP C-LAN circuit packs.

From the rear of the media gateway:

NOTE:
If installing the TN799DP into an old carrier or cabinet, you must replace the WP cables, which connect the backplane to the rear connector panel, with Twisted Pair I/O cables to handle the 100 Mbps speed. Refer to ‘‘Replace the WP Cables’’ on page 29 for information on replacing the wires.

2 Connect the Ethernet adapter to the Amphenol connector corresponding to each TN799DP slot. See ‘‘Cable Connection for C-LAN’’ on page 11. For a pinout of TN799DP, see ‘‘TN799DP Pinout’’ on page 11.

3 Connect one end of each CAT5 cable to each Ethernet adapter.

4 Install a cable from the media gateway to the network through a hub or 110 (purple) wall field as required.

Cable Connection for C-LAN

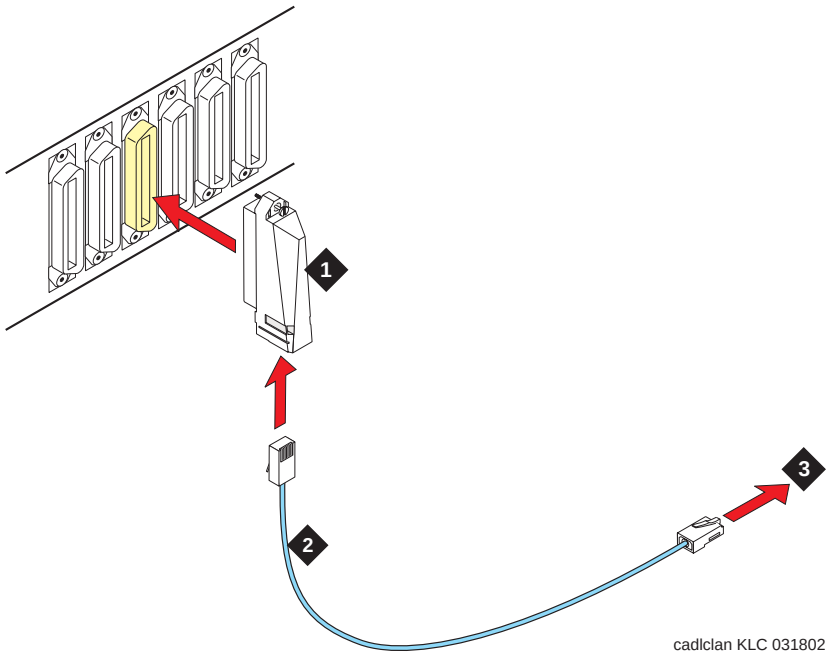


Figure notes

1 Ethernet Adapter (259A shown)

2 CAT3/5 Cable with DW8 Connectors

3 To Customer's Network

TN799DP Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Install the circuit packs

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:
The TN799DP circuit packs are hot-swappable, so you do not need to power down the media gateway to install them.

NOTE:
To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1 Insert the TN799DP circuit packs into the port slots identified earlier.

Administer the TN799DP

Use a terminal emulation application or Avaya Site Administration for the administration.

NOTE:
The customer or design team provides the actual names, IP addresses, subnet masks, and gateway addresses. Refer to the filled-out job aid titled *Pre-Installation Network Planning Forms—S8700 Media Server* for them.

1 Log in as **craft**.

2 Type **list configuration all** and press **Enter** to verify that Communication Manager recognizes the TN799DP circuit packs.

3 Type **change node-names** and press **Enter**.

4 On page 2, type in the node names and IP addresses for each TN799DP C-LAN circuit pack.

```
change node-names ip                                      Page   1 of   1
                                 IP NODE NAMES
    Name                  IP Address          Name              IP Address
csr1clan1              192.168.1  .80                             .   .   .
sr1clan2               172.16 .19 .220                            .   .   .
traf-clan              172.16 .19 .118                            .   .   .
                          .   .   .                               .   .   .
                          .   .   .                               .   .   .
                          .   .   .                               .   .   .
                          .   .   .                               .   .   .
( 12 of 12  administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a
node-name
```

5 Type **display circuit-pack** and press **Enter**. Verify that the TN799DP shows up in the Code column.

6 Type **change ip-interfaces** and press **Enter**.

```
change ip-interfaces                                          Page   1 of  15

                                  IP INTERFACES

Enable                                                                    Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y   C-LAN  05B11 TN799  C sr1clan2        255.255.248.0   172.16 .23 .254 3
   y   C-LAN  01A11 TN799  C traf-clan       255.255.248.0   172.16 .23 .254 2
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
```

7 Type in the following information:

NOTE:
Enable the Ethernet port last, after you have filled in the information in the other fields.

- Set `Slot` field to ***UUCSS***, where *UUCSS* is the cabinet, carrier, and slot.
- The `Code` and `SFX` fields are automatically populated with TN799DP.
- In the `Node Name` field type the same node name entered on the Node Name screen.
- In the `Subnet Mask` field use the default setting unless you are given a different subnet mask.
- In the `Gateway Address` field use the address you are given or leave blank.
- Set the `Net Region` field to **1** unless you are given a different number.
- Set the `Enable Eth Pt` field to **y**

8 Press **Enter** to save the information and effect the new settings.

9 Type **add data-module next** and press **Enter**.

```
add data-module 30006                                  Page   1 of   1
                              DATA MODULE

  Data Extension: 30006           Name: C-LAN Data Module
            Type: ethernet
            Port: 01A33
            Link: 5




Network uses 1's for Broadcast Addresses? y
```

10 Set the `Type` field to **ethernet**.

11 Set the `Port` field to correspond to the circuit pack location.

The port number (final two digits) is always 33 for the TN799DP circuit pack.

12 Set the `Link` field to an unassigned or next-available link number.

13 Set the `Network uses 1's for Broadcast Address?` field according to the your network requirements.

14 Type a unique name in the `Name` field.

15 Press **Enter** to save your changes.

Refer to the *Administration for Network Connectivity for Avaya™ Communication Manager* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

Test the external connection to the LAN

To test the external IP connections, ping the gateway and a known computer connected to the network. If everything is configured correctly, you have a successful ping. If you cannot ping, verify the IP-address information and check the connectivity, including the cabling.

To test the external IP connections, ping a computer on the same subnet, the gateway, and a computer beyond the gateway. If everything is configured correctly, the `Result` column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1 Type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of a computer on the same subnet and *UUCSS* is the cabinet, carrier, and slot of the TN799DP C-LAN circuit pack.

```
ping ip-address 192.168.10.21

                          PING RESULTS

  End-pt IP        Port      Port Type  Result    Time(ms)  Error Code

  192.168.10.21    01A13      CLAN      PASS       10
```

2 If step 1 passes, type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of the customer's gateway.

3 If step 2 passes, type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of a computer beyond the gateway.

The TN799DP C-LAN circuit pack is now installed in the media gateway and connected to the IP network.

TN2302AP IP Media Processor

The TN2302AP IP Media Processor provides on interface between a customer's IP network and Avaya media gateways. This interface is used to transport voice and FAX between the media gateways and IP devices such as H.323 V2 compliant endpoints and other Avaya telephone systems. Each TN2302AP can support between 32 and 64 voice channels, depending on the codecs used.

NOTE:
The P board suffix designation means the circuit pack is firmware-downloadable. Click the **Upgrading** tab above and go to "Upgrade Selected Port Circuit Pack Firmware" for more information.

The following sections describe the process:

- ‘‘Check your shipment’’ on page 16
- ‘‘Install a TN2302AP IP Media Processor’’ on page 17
- ‘‘Install the cables’’ on page 17
- ‘‘Install the circuit packs’’ on page 18
- ‘‘Administer the IP Media Processor’’ on page 19
- ‘‘Test the external connection to the LAN’’ on page 21

For further administration, refer to the *Administration for Network Connectivity for Avaya™ Communication Manager.*

Check your shipment

When the order arrives at your site, check the contents (see ‘‘Required Hardware’’ on page 16).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in ‘‘Required Hardware’’ on page 16 for each TN2302AP IP Media Processor ordered.
3. Read and follow any directions inserted into the package by the factory.

Required Hardware

Comcode/Code	Description	Quantity
108312612	TN2302AP IP Media Processor (MedPro)	1or more

Required Hardware

Comcode/Code	Description	Quantity
848525887	TN2302AP Amphenol Adapter[1]	1/MedPro
700181118	Tight-twisted I/O cables	1/MedPro[2]

[1]The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the network. See ‘‘TN2302AP Amphenol Adapter’’ on page 18.

[2]Only if installing in old carriers or cabinets with WP cables.

NOTE:
The customer must provide one CAT5 or better cable for each TN2302AP.

Install a TN2302AP IP Media Processor

The TN2302AP consumes 16 watts of power and the power budget is 15 watts per slot. Do not fill every available slot in a given media gateway (G600 or SCC1) or carrier (MCC1) with them. Use the following guidelines:

- MCC1—18 per carrier
- SCC1—16 per media gateway
- G600—5 per media gateway

Have the following equipment on site before your shipment arrives:

- An unoccupied port slot in the media gateway for each TN2302AP IP Media Processor
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network (LAN).
- One or more valid, unused IP addresses on the network that can be assigned to the IP Media Processor server. You also need the subnet mask and default gateway.

NOTE:
Get this information from the network administrator or refer to the job aid entitled *Pre-Installation Network Planning Form—S8700 Media Server.*

In addition to the TN2302AP IP Media Processor, you must also install and administer a C-LAN circuit pack (TN799DP). For C-LAN installation and administration, refer to ‘‘TN799DP Control LAN’’ on page 9.

Install the cables

1 Determine into which port slots you are putting the TN2302AP IP Media Processor circuit packs.

From the rear of the media gateway:

NOTE:
If installing the TN2302AP into an old carrier or cabinet, you must replace the WP cables, which connect the backplane to the rear connector panel, with Twisted Pair I/O cables to

handle the 100 Mbps speed. Refer to "Replace the WP Cables" on page 29 for information on replacing the wires.

2 Connect the amphenol connector on the adapter to the Amphenol connector corresponding to each TN2302AP slot. Refer to "TN2302AP Amphenol Adapter" on page 18.

TN2302AP Amphenol Adapter

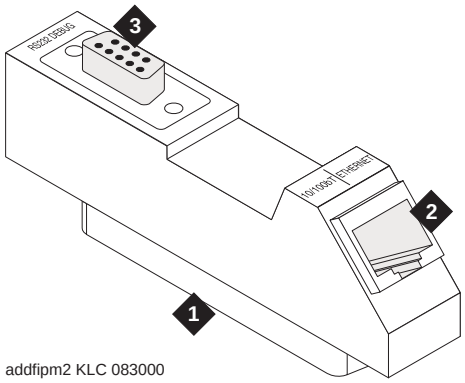


Figure notes

1 Amphenol connector to backplane connector corresponding to TN2302AP slot

2 RJ45 LAN cable connection
- 10 Mbps uses CAT3 cable.
- 100 Mbps uses CAT5 cable.

3 9-pin connector for maintenance

NOTE:
You need a CAT5 or better cable for 100-Mbps operation.

3 Connect the network cable(s) to the ETHERNET connector on the TN2302AP backplane adapter(s).

Install the circuit packs

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

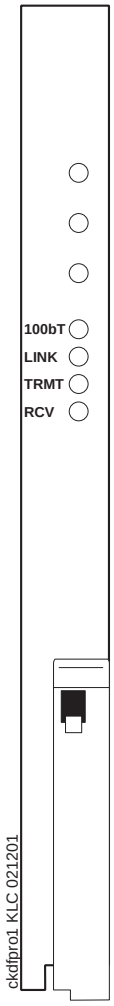
NOTE:
The TN2302AP circuit packs are hot-swappable, so you do not need to power down the media gateway to install them.

NOTE:
To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1 Insert the TN2302AP IP Media Processor into the port slot you reserved for it and seat it properly (See “TN2302AP IP Interface faceplate” on page 19).

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

TN2302AP IP Interface faceplate



Administer the IP Media Processor

Use a terminal emulation application or Avaya Site Administration for the administration.

1 Log in as **craft**.

2 Type **list configuration all** and press **Enter** to verify that Communication Manager recognizes the TN2302AP circuit packs.

3 Type **change node-names** and press **Enter**.

4 On page 2, type in the node names and IP addresses for the TN2302AP.

```
change node-names ip                                        Page   1 of   1
                                  IP NODE NAMES
    Name              IP Address           Name              IP Address
cognac              172.16 .19 .2                             .   .   .
default             0  .0  .0  .0                            .   .   .
medpro              192.168.1  .82                           .   .   .
prowler             192.168.1  .83                           .   .   .
prowler1            172.16 .19 .221                          .   .   .
prowler2            172.16 .19 .222                          .   .   .
prowler3            172.16 .19 .223                          .   .   .
prowler4            172.16 .19 .224                          .   .   .
prowler5            172.16 .19 .225                          .   .   .
sr1clan1            192.168.1  .80                           .   .   .
sr1clan2            172.16 .19 .220                          .   .   .
traf-clan           172.16 .19 .118                          .   .   .
                       .   .   .                             .   .   .
                       .   .   .                             .   .   .
                       .   .   .                             .   .   .
                       .   .   .                             .   .   .
( 12 of 12  administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
```

5 Type **display circuit-pack** and press **Enter**. Verify that the TN2302AP shows up in the Code column.

6 Type **change ip-interfaces** and press **Enter**.

Type in the following information for the TN2302AP IP Media Processor and TN799DP C-LAN.

```
change ip-interfaces                                        Page   1 of  15

                                IP INTERFACES

Enable                                                                   Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   n   MEDPRO 01B11 TN2302   prowler         255.255.255.0   172.16 .23 .254 1
   y   C-LAN  05B11 TN799  C sr1clan2        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 07B09 TN2302   prowler1        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 07B10 TN2302   prowler2        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 03A11 TN2302   prowler3        255.255.248.0   172.16 .23 .254 2
   y   MEDPRO 05A12 TN2302   prowler5        255.255.248.0   172.16 .23 .254 2
   y   C-LAN  01A11 TN799  C traf-clan       255.255.248.0   172.16 .23 .254 2
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .

n 255.255.255.0      .   .   .
```

NOTE:
Enable the Ethernet port last, after you have filled in the information in the other fields.

- Set `Slot` field to ***UUCSS***, where ***UUCSS*** is the cabinet, carrier, and slot.
- The `Code` and `SFX` fields are automatically populated with TN2302AP circuit packs.
- In the `Node Name` field type the same node name entered on the Node Name screen.
- In the `Subnet Mask` field use the default setting unless you are given a different subnet mask.
- In the `Gateway Address` field use the address you are given or leave blank.
- Set the `Net Region` field to **1** unless you are given a different number.
- Set the `Enable Eth Pt` field to **y**

7 Press **Enter** to save the information and effect the new settings.

Refer to the *Administration for Network Connectivity for Avaya™ Communication Manager* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

Test the external connection to the LAN

To test the external IP connections, ping a computer on the same subnet, the gateway, and a computer beyond the gateway. If everything is configured correctly, the `Result` column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling

1 Type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of a computer on the same subnet and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

```
ping ip-address 192.168.10.21

                        PING RESULTS

  End-pt IP        Port      Port Type  Result    Time(ms)  Error Code

  192.168.10.21    01A13      MEDPRO   PASS       10
```

2 If step 1 passes, type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of the customer's gateway.

3 If step 2 passes, type **ping ip-address *ipaddress* board *UUCSS*** and press **Enter**, where *ipaddress* is the IP address of a computer beyond the gateway.

The TN2302AP IP Media Processor is now installed in the media gateway and connected to the IP network.

TN2501 Voice over the LAN (VAL)

The TN2501 Voice over the LAN (VAL) is an integrated announcement circuit pack that

- offers up to 1 hour of announcement storage capacity.
- requires shorter backup and restore times.
- is firmware downloadable.
- plays announcements over the TDM bus.
- has 33 ports, including
  - 1 dedicated telephone port for recording and playing back announcements (port number 1).
  - 1 ethernet port (port number 33).
  - 31 playback ports (ports 2–32).
- 10/100 Mb Ethernet interface, allowing announcement and firmware file portability over your LAN (FTP server functions).
- supports *.wav announcement files.

Important file specifications

Voice Announcement over LAN (VAL) requires that announcement files are in the following *.wav formats:

- CCITT A-Law or CCITT μ-Law (mu-Law) companding format (do not use PCM)
- 8-kHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

You must convert other wave (*.wav) file formats to those listed above. Telephone access creates the correct file formats.

Caveats

Remember the following points when using the TN2501AP integrated announcement circuit pack for the first time:

- Despite the feature name, announcements are not played over the LAN but can be transferred to and from the TN2501AP circuit pack over the LAN.
- You cannot save or restore announcements to a TN2501AP circuit pack to or from
  - a TN750C circuit pack
  - flashcards
  - tape
  - magneto optical disks.

Install a TN2501AP VAL

NOTE:
To install a TN2501AP, make sure that the system is enabled for TN2501AP (VAL) boards. If the **Maximum VAL boards** field on the Customer Options screen is set to 0, then you need to obtain and install a new license file before you can install the card.

Installing the pack includes:

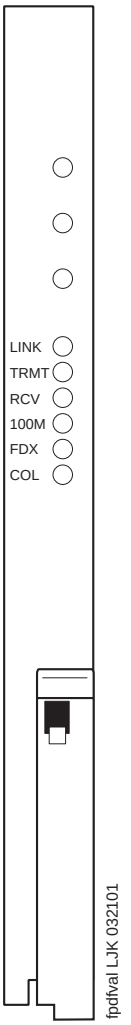
- ‘‘Verifying the required hardware’’ on page 23
- ‘‘Install the Circuit Packs’’ on page 25
- ‘‘Administer the TN2501AP’’ on page 26

Verifying the required hardware

Make sure that you have the required hardware:

- TN2501AP VAL circuit pack (108772583). See ‘‘Faceplate of VAL circuit pack’’ on page 24.
- 10/100BaseT backplane adapter (848525887—same one used for the IP Media Processor). See ‘‘Backplane Adapter’’ on page 25.
- Tight-twisted I/O cables (700181118) only if installing in old carriers or cabinets with WP cables.
- LAN cable with RJ45 connectors (customer supplied).

Faceplate of VAL circuit pack



Backplane Adapter

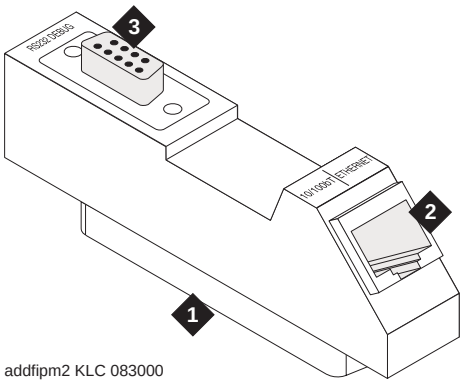


Figure notes

1 Amphenol connector to backplane connector corresponding to TN2501AP slot

2 RJ45 LAN cable connection

- 10 Mbps uses CAT3 cable.
- 100 Mbps uses CAT5 cable.

3 This connector is not used for VAL.

Install the Circuit Packs

WARNING:
To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

1 Insert the circuit pack into any port slot and close the latch securely.

At first, the red and green LEDs are on steady, then the green LED flashes. If there are announcements on the circuit pack, the amber LED flashes while the announcements are copied from FLASH to RAM. After about 3-5 minutes, all of the top 3 LEDs go out, although the time is longer if there are announcements already recorded on the circuit pack.

NOTE:
If the TN2501AP circuit packs are at the Communication Manager limit and you insert a VAL circuit pack, the red LED on that circuit pack stays on, indicating that Communication Manager does not accept it.

NOTE:
If installing the TN2501AP into an old carrier or cabinet, you must replace the WP cables, which connect the backplane to the rear connector panel, with Twisted Pair I/O cables to handle the 100 Mbps speed. Refer to ‘‘Replace the WP Cables’’ on page 29 for information on replacing the wires.

2 Connect the backplane adapter to the Amphenol connector on the back of the media gateway corresponding to the TN2501AP circuit pack slot.

3 Connect the LAN CAT5 cable to the RJ45 connector on the backplane adapter.

Administer the TN2501AP

After you have installed the hardware, to support an FTP session you must administer and test the installation.

Use a terminal emulation application or Avaya Site Administration for this administration.

1 Type **list configuration board *board-location*** and press **Enter**.

The System Configuration report appears. Use this report to ensure that the Communication Manager recognizes the TN2501AP circuit pack after it is latched in the carrier slot.

```
list configuration board 1c08                                          page 1

                              SYSTEM CONFIGURATION

Board                                                    Assigned Ports
Number   Board Type              Code     Vintage    u=unassigned t=tti p=psa

01C08    VAL-ANNOUNCEMENT        TN2501AP HW00 FW001 01 02 03 04 05 06 07 08
                                                     09 10 11 12 13 14 15 16
                                                     17 18 19 20 21 22 23 24
                                                     25 26 27 28 29 30 31 32
                                                     U



Command successfully completed
```

2 Verify the following field values:

- Board Type shows **VAL-ANNOUNCEMENT**
- Code is **TN2501AP**

3 Type **change node-names ip** and press **Enter**.

The IP Node Names screen appears. Use this screen to administer the circuit pack's node name.

```
change node-names ip                                        Page   1 of   1
                                IP NODE NAMES
    Name              IP Address           Name              IP Address
Tiki                172.22 .22 .79                            .   .   .
cdr_1               192.168.22 .63                            .   .   .
default             0  .0  .0  .0                            .   .   .
iolan               172.22 .22 .68                            .   .   .
lulu_cl1            172.22 .22 .71                            .   .   .
lulu_cl2            172.22 .22 .77                            .   .   .
riki                172.22 .22 .20                            .   .   .
rsat4               172.31 .5  .49                            .   .   .
rsat5               172.23 .23 .40                            .   .   .
st10clan#1          192.168.22 .21                            .   .   .
st12clan            172.22 .22 .67                            .   .   .
st12prowler#1       172.22 .22 .75                            .   .   .
VAL#1               172.22 .22 .120                           .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
( 12 of 12  administered node-names are displayed)
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

4 Type a unique name in the Name field.

This name is recognized only within the Communication Manager and does not need to match the node name on your network.

5 Enter the **IP Address**.

Get this information from the network administrator or refer to the filled-out job aid titled *Pre-Installation Network Planning Forms—S8700 Media Server.*

6 Press **Enter** to save the changes.

7 Type **change ip-interfaces** and press **Enter**.

The IP Interfaces screen appears. Use this screen to administer an IP interface, which associates the circuit pack with an IP address.

```
change ip-interfaces                                        Page   1 of   6

                                  IP INTERFACES

Enable                                                                    Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y   C-LAN  01C16 TN799  C st12clan        255.255.0  .0   172.22 .22 .254 1
   y   MEDPRO 01E04 TN2302   st12prowler#1   255.255.0  .0   172.22 .22 .254 1
   y   VAL    01C08 TN2501   VAL#1           255.255.0  .0   172.22 .22 .254
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
```

8 Set the `Enable Eth Pt` field to **y**.

9 Set the `Type` field to **VAL**.

10 Type the circuit pack location in the `Slot` field (UUCSS).

If a TN2501AP circuit pack is not at this location when you submit the screen, the software prompts you to enter a VAL circuit pack location.

11 In the `Node Name` field, enter the Node Name you entered with the change node-names ip command.

If you press Help, a list of administered node names appears (including the name you administered with the change node-names ip command), and you can select from the list.

12 Set the `Subnet Mask` field according to your network requirements.

Gateway address is usually the same as the TN2501AP circuit pack's IP address, usually with the fourth octet changed. Be sure to set this address according to your network requirements.

13 Press **Enter** to save the changes.

14 Type **add data-module *extension*** and press **Enter**.

The Data Module screen appears. Use this screen to administer the data module that is associated with the TN2501AP ethernet port.

```
add data-module 30006                                  Page   1 of   1
                                DATA MODULE

  Data Extension: 30006           Name: VAL#2 Data Module
            Type: ethernet
            Port: 1b0333
            Link: 5




Network uses 1's for Broadcast Addresses? y
```

15 Set the `Type` field to **ethernet**.

16 Set the `Port` field to correspond to the circuit pack location.

The port number (final two digits) is always **33** for the TN2501AP circuit pack.

17 Set the `Link` field to an unassigned or next-available link number.

18 Set the `Network uses 1's for Broadcast Address?` field according to the your network requirements.

19 Type a unique name in the `Name` field.

20 Press **Enter** to save your changes.

21 Type **add ip-route** and press **Enter**.

22 Administer IP routes to the TN2501AP circuit pack.

23 Press **Enter** to effect the changes.

Test the external connection to the LAN

1. Click **Start** > **Run** to open the Run dialog box.
2. Type **command** and press **Enter** to open an MS-DOS command window.
3. Type **ping *ipaddress***, where *ipaddress* is a known computer on the network and press **Enter** to verify connectivity.
4. Using a terminal emulation application, type **status link** to test the new IP connections that you have administered.

Replace the WP Cables

You must replace the WP cables, which connect the backplane to the rear connector panel, with Twisted Pair I/O cables.

CAUTION:
Turn off power to the carrier or media gateway being serviced.

CAUTION:
When adding or replacing any hardware and associated cables and adapters, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

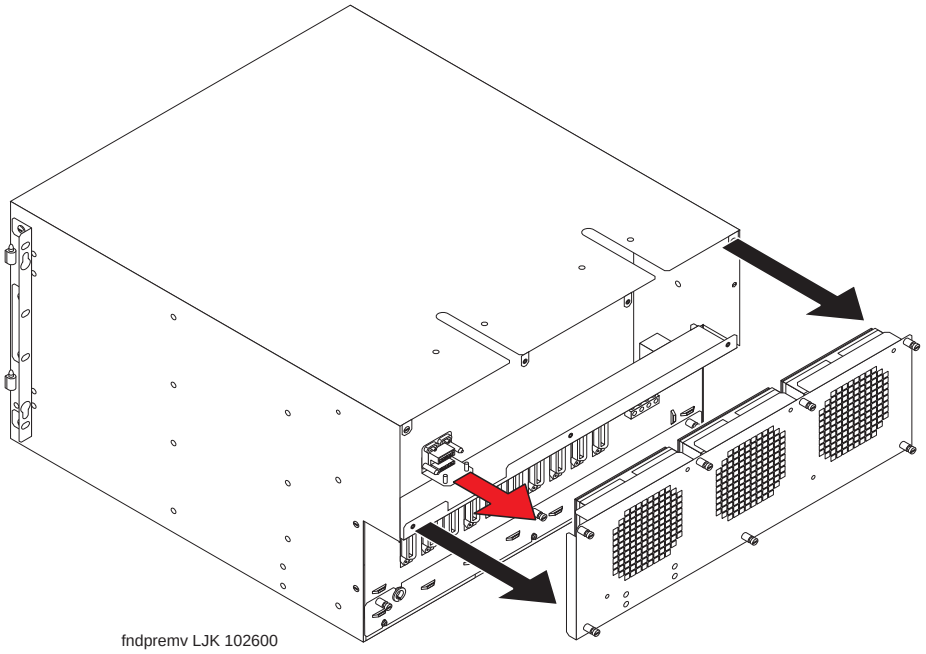
1. For the G600 media gateway you must remove the fan assembly to access the cables. Loosen the thumb screws on the fan assembly and pull it straight out as shown in “Fan Assembly Removal” on page 30. Leave the fan assembly off until all the wires are installed.
2. Note the orientation of the existing cables (WP-90753, LI). The WP cables may be white and red or multicolored.
3. Remove the nontwisted pair WP cables from the backplane and the connector panel slot(s).
4. In their place install the tight-twisted pair I/O cables (700181118) onto the backplane, according to the proper orientation shown in “Proper Orientation for the Twisted Pair I/O Cables” on page 31. Observe the white outline printed on the backplane for the location of each connector.

NOTE:
When viewed from the "wiring" side of the twin connectors (that is, while plugging them into the backplane) and with the connectors oriented properly for plug-in, they should look like “Proper Orientation for the Twisted Pair I/O Cables” on page 31.

The circled pin locations are “No-Connects”; that is, they have no wires in them. At the top there is an orange-black pair on the right and a violet-brown pair on the left.

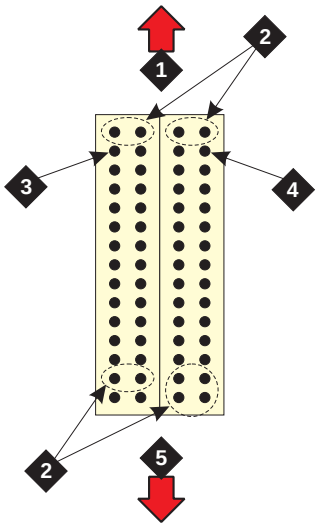
The 50-position metal shell D connectors should be installed into the connector panel with the longer side of the D (pins 1–25) toward the right when viewed from the rear of the media gateway.

Fan Assembly Removal



fndpremv LJK 102600

Proper Orientation for the Twisted Pair I/O Cables



iodspair KLC 072602

Figure notes

1	Top	**4**	Orange-black
2	No connects; no wires	**5**	Bottom
3	Violet-brown		

Install and Administer Trunks and Lines

This section contains information on adding analog and digital trunks and lines to an existing media gaTeway. These Are Examples Only; Actual Wiring Procedures May Vary At Each Site.

List Of Analog and Digital Trunk and Line Circuit Packs

''Analog and digital trunk and line circuit packs'' on page 32 lists the circuit packs sorted by apparatus code, including those used in non-United States installations.

Analog and digital trunk and line circuit packs

Apparatus Code	Name
TN1654	DS1 Converter—T1, 24 Channel/E1, 32 Channel (S8700 Multi-Connect configuration only)
TN2139	Direct Inward Dialing (DID) Trunk—Italy, 8 ports
TN2140B	Tie Trunk—Hungary, Italy, 4-wire, 4 ports
TN2146	Direct Inward Dialing Trunk—Belgium, the Netherlands, 8 ports
TN2147C	Central Office Trunk—multiple countries, 8 ports
TN2181	DCP Digital Line, 2-Wire, 16 ports
TN2183	Analog Line—multiple countries, 16 ports
TN2184	Direct Inward/Outward Dialing (DIOD) Trunk—Germany, 4 ports
TN2198B	ISDN-BRI 2-Wire U Interface, 2-wire, 12 ports
TN2199	Central Office Trunk—Russia, 3-wire, 4 ports
TN2224CP	DCP Digital Line, 2-wire, 24 ports; Firmware Download Enabled
TN2313AP	DS1 Interface Trunk, 24 channels; Firmware Download Enabled
TN429D	Direct Inward/Outward Dialing (DIOD) or CO Trunk, 8 ports
TN436B	Direct Inward Dialing (DID) Trunk—Australia, 8 ports
TN459B	Direct Inward Dialing (DID) Trunk—United Kingdom, 8 ports
TN464GP/ TN2464BP	DS1 Interface Trunk—T1, 24 Channel; E1, 32 Channel; Firmware Download Enabled
TN465C	Analog Central Office Trunk—multicountry, 8 ports
TN479	Analog Line, 16 ports
TN497	Tie Trunk—Italy, 4 ports
TN556D	ISDN-BRI, S/T-NT Interface, 4-wire, 12 ports
TN570D	Expansion Interface

Continued on next page

Analog and digital trunk and line circuit packs — *Continued*

Apparatus Code	Name
TN726B	Data Line, 8 ports
TN746B	Analog Line, 16 ports
TN747B	Central Office Trunk, 8 ports
TN753B	Direct Inward Dialing (DID) Trunk, 8 ports
TN754C	DCP Digital Line, 4-wire, 8 ports
TN760E	Tie Trunk, 4-wire, 4 ports
TN762B	Hybrid Line, 8 ports
TN763D	Auxiliary Trunk, 4 ports
TN767E	DS1 Interface Trunk—T1, 24 Channel
TN769	Analog Line, 8 ports
TN793B	Analog Line with Caller ID, 24 ports
TN797	Analog CO Trunk or Line Combo—US, Canada, 8 ports

The following list provides information on installing analog and digital trunk and line circuit packs:

- "Add TN464GP/TN2464BP with Echo Cancellation" on page 33
- "Add CO, FX, WATS, and PCOL" on page 36
- "Add DID Trunks" on page 37
- "Add Analog Tie Trunks" on page 38
- "Add Digital DS1 Tie Trunks and OPS" on page 40
- "Add TTC Japan 2-Mbit Trunk" on page 40
- "Add CAMA/E911 Trunk" on page 41
- "Add ISDN—PRI" on page 48
- "Add TN1654 DS1 Converter (Multi-Connect only)" on page 51

Add TN464GP/TN2464BP with Echo Cancellation

The TN464GP and TN2464BP circuit packs with echo cancellation are intended for customers who are likely to encounter echo over circuits connected to the Direct Distance Dialing (DDD) network. These circuit packs are intended for channels supporting voice; therefore, they support the following trunks: CAS, CO, DID, DIOD, DMI, FX, Tie, WATS. They do not support any data trunk groups.

NOTE:
The P suffix designation means the circuit pack is programmable; new firmware can be downloaded to the circuit pack.

The TN464GP and TN2464BP circuit packs are backwards compatible, although the echo cancellation feature can only be used with Release 1.1 or later of Communication Manager and after the feature is enabled.

The echo cancellation feature cancels echoes with delays up to 96 milliseconds. Echo cancellation is disabled automatically when the circuit pack detects a 2100-hertz *phase-reversed* tone put out by high-speed modems (56 kilobaud) but not when it detects a 2100-hertz *straight* tone generated by low-speed modems (9.6 kilobaud).

For information on installing port circuit packs, refer to "Install the Circuit Packs" on page 8. For information on setting the option switches, refer to the job aid titled *Option Switch Settings* PDF . For information on administering the circuit packs, refer to the *Avaya Administrator's Guide for MultiVantage™ Software.*

Echo cancellation must first be purchased then activated by the license file. Refer to the *Avaya Administrator's Guide for the Avaya™ Communication Manager.*

Use the following procedure to modify the settings:

NOTE:
You do not need to busyout the circuit packs to modify the settings. But the modified settings do not take effect until either the port is busied out or the scheduled maintenance runs.

1 Type **display system-parameters customer-options** and press **Enter**. On screen 2 verify that the `DS1 Echo Cancellation?` field is set to **y**. If not, contact your Avaya representative as this must be set by the license file.

```
display system-parameters customer-options                  Page   2 of  10
                                OPTIONAL FEATURES

    Abbreviated Dialing Enhanced List? y         Audible Message Waiting? y
        Access Security Gateway (ASG)? n             Authorization Codes? y
        Analog Trunk Incoming Call ID? y                      CAS Branch? n
 A/D Grp/Sys List Dialing Start at 01? y                        CAS Main? n
Answer Supervision by Call Classifier? y                Change COR by FAC? n
                                ARS? y Computer Telephony Adjunct Links? n
               ARS/AAR Partitioning? y      Co-Res DEFINITY LAN Gateway? y
         ARS/AAR Dialing without FAC? y  Cvg Of Calls Redirected Off-net? y
          ASAI Link Core Capabilities? y                     DCS (Basic)? y
          ASAI Link Plus Capabilities? y                DCS Call Coverage? y
       Async. Transfer Mode (ATM) PNC? n                DCS with Rerouting? y
  Async. Transfer Mode (ATM) Trunking? n
             ATM WAN Spare Processor? n   Digital Loss Plan Modification? n
                                ATMS? n                         DS1 MSP? y
                 Attendant Vectoring? y            DS1 Echo Cancellation? y
```

2 Type **add trunk-group next** and press **Enter**.

```
add trunk-group next                                        Page   2 of  20
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                                      Maintenance Tests? y
                                Data Restriction? n

   Abandoned Call Search? n
   Suppress # Outpulsing? n

       Charge Conversion: 1
           Decimal Point: none
         Currency Symbol:
          Charge Type: units      Receive Analog Incoming Call ID: disabled
                                              Per Call CPN Blocking Code:
                                            Per Call CPN Unblocking Code:

           Outgoing ANI:                           Ds1 Echo Cancellation? y
```

3 On Trunk Features, screen 2, set the `DS1 Echo Cancellation?` field to **y**.

4 Type **add ds1 *UUCSS***, where *UUCSS* is the slot location, and press **Enter**.

```
add ds1 01a06
                               DS1 CIRCUIT PACK

            Location: 01A06                          Name: ds1 1a06 F 18
            Bit Rate: 2.048                   Line Coding: hdb3

      Signaling Mode: isdn-pri
             Connect: network
   TN-C7 Long Timers? n                   Country Protocol: 1
Interworking Message: PROGress            Protocol Version: a
Interface Companding: mulaw                         CRC? n
           Idle Code: 11111111
                              DCP/Analog Bearer Capability: 3.1kHz


      Slip Detection? n                Near-end CSU Type: other

   Echo Cancellation? y
        EC Direction: inward
    EC Configuration: 4
```

5 On the DS1 Circuit Pack screen, set the `Echo Cancellation?` field to **y**.

When set to y, 2 new fields display: `EC Direction:` and `EC Configuration:`.

- If you know the echo is coming into the system, keep the default setting for the `EC Direction:` field of **inward**.
- If you know that the distant party is hearing echo that originates in the system or its line side stations or equipment, set the `EC Direction:` field `to` **outward**.
- Keep the default setting for the `EC Configuration:` field of **4**. This setting minimizes extremely strong echo, very hot signals, or excessive clipping or breakup of speech from a distant party. It reduces speech clipping but may allow slight residual echo or more background noise.

6 Test the voice quality on a telephone connected through the TN464GP or TN2464BP circuit packs and known to have echo to see if the echo was eliminated.

7 If the echo still exists, set the `EC Configuration:` field to **1**, **2**, or **3**, then test the voice quality. These settings provide help for the following scenarios:

- Setting 1 rapidly minimizes echo when first detected, regardless of the loudness of the talker's voice. Settings 1 and 4 have the same EC settings except that Setting 1 introduces 6 dB of loss.
- Setting 2 minimizes speech clipping, but it takes a fraction of a second longer for the echo to fade.
- Setting 3 eliminates speech clipping, but a strong echo may take 2 or 3 seconds to fade.

8 If after trying all these settings, the echo still exists, contact technical support.

Add CO, FX, WATS, and PCOL

Each Central Office (CO), Foreign Exchange (FX), Personal Central Office Line (PCOL), or Wide Area Telecommunications Service (WATS) trunk connects to 1 port of either an 8-port TN747B Central Office trunk or to 1 of an assortment of North American CO trunk circuit packs.

Before physically installing the circuit pack, you need the assigned slot location (UUCSS), where UU is the media gateway (MCC1, SCC1) or port network number, C is the media gateway or carrier (MCC1), and SS is the slot location. The information is available from the person who adminstered the translations (most likely the software specialist). If not, you can find the information on the Trunk Group Status screen.

1 Get the trunk group number from the administrator.

2 Type **status trunk-group *number*** and press **Enter**.

```
status trunk 1

                           TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0001/001 13A0701  in-service/idle    no
0001/002 13A0702  in-service/idle    no
0001/003 13A0703  in-service/idle    no
0001/004 13A0704  in-service/idle    no
0001/005 13A0705  in-service/idle    no
0001/006 13A0706  in-service/idle    no
0001/007 13A0707  in-service/idle    no
0001/008 13A0708  in-service/idle    no
0001/009 13A0801  out-of-service
0001/010 13A0802  out-of-service
0001/011 13A0803  out-of-service
0001/012 13A0804  out-of-service
0001/013 13A0805  out-of-service
0001/014 13A0806  out-of-service
```

3 Install the CO trunk circuit pack in the assigned carrier slot.

Use the correct type of trunk circuit pack with enough ports to handle the number of trunks you need. Refer to the *Hardware Guide for the Avaya™ Communication Manager* to find out how many circuit packs you need.

4 Administer the screens listed under Adding a CO, FX, or WATS Trunk Group and Adding a PCOL Trunk Group in the *Administrator's Guide for the Avaya™ Communication Manager.*

Add DID Trunks

Each Direct Inward Dial (DID) trunk connects to 1 port of a DID Trunk circuit pack or to 1 port of an assortment of global DID/DIOD trunk circuit packs.

Before physically installing the circuit pack, you need the assigned slot location (UUCSS), where UU is the media gateway (MCC1, SCC1) or port network number, C is the media gateway or carrier (MCC1), and SS is the slot location. The information is available from the person who adminstered the translations (most likely the software specialist). If not, you can find the information on the Trunk Group Status screen.

1 Get the trunk group number from the administrator.

2 Type **status trunk-group *number*** and press **Enter**.

```
status trunk 1

                            TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0001/001 13A0701  in-service/idle    no
0001/002 13A0702  in-service/idle    no
0001/003 13A0703  in-service/idle    no
0001/004 13A0704  in-service/idle    no
0001/005 13A0705  in-service/idle    no
0001/006 13A0706  in-service/idle    no
0001/007 13A0707  in-service/idle    no
0001/008 13A0708  in-service/idle    no
0001/009 13A0801  out-of-service
0001/010 13A0802  out-of-service
0001/011 13A0803  out-of-service
0001/012 13A0804  out-of-service
0001/013 13A0805  out-of-service
0001/014 13A0806  out-of-service
```

3 Install a DID/DIOD trunk circuit pack in the assigned carrier slot.

4 Administer the screens listed under Adding a DID Trunk Group in the *Administrator's Guide for the Avaya™ Communication Manager.*

Add Analog Tie Trunks

Each analog tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of global tie trunk circuit packs.

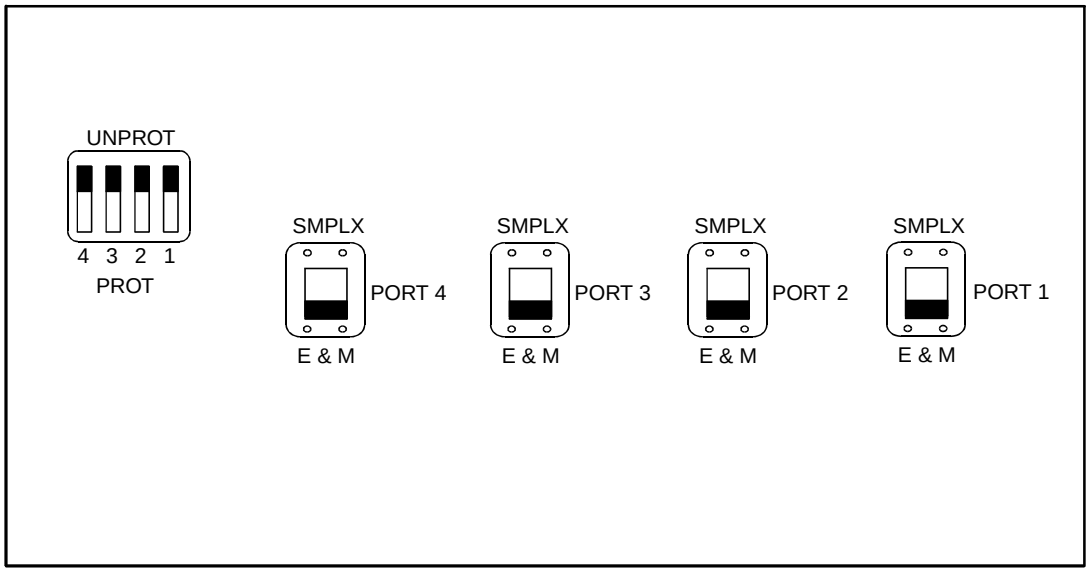
Before physically installing the circuit pack, you need the assigned slot location (UUCSS), where UU is the media gateway (MCC1, SCC1) or port network number, C is the media gateway or carrier (MCC1), and SS is the slot location. The information is available from the person who adminstered the translations (most likely the software specialist). If not, you can find the information on the Trunk Group Status screen.

1. Get the trunk group number from the administrator.
2. Type **status trunk-group *number*** and press **Enter**.

```
status trunk 1

                          TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0001/001 13A0701  in-service/idle    no
0001/002 13A0702  in-service/idle    no
0001/003 13A0703  in-service/idle    no
0001/004 13A0704  in-service/idle    no
0001/005 13A0705  in-service/idle    no
0001/006 13A0706  in-service/idle    no
0001/007 13A0707  in-service/idle    no
0001/008 13A0708  in-service/idle    no
0001/009 13A0801  out-of-service
0001/010 13A0802  out-of-service
0001/011 13A0803  out-of-service
0001/012 13A0804  out-of-service
0001/013 13A0805  out-of-service
0001/014 13A0806  out-of-service
```

3. Install the analog or global tie trunk circuit pack in the assigned slot.
4. For customer-owned (not leased) tie-trunk facilities (such as campus environments), the TN760E tie trunk circuit pack provides signaling capabilities beyond those specified by the industry-wide E&M standard. Refer to ‘‘TN760E Tie Trunk Option Switches (Component Side)’’ on page 39 and ‘‘TN760E Analog Tie Trunk Option Switch Settings and Administration’’ on page 39 for information on setting the option switches and administering the port.
5. Administer the screens listed under Adding a Tie Trunk Group in the *Administrator’s Guide for the Avaya™ Communication Manager.*

TN760E Tie Trunk Option Switches (Component Side)



r758183 RBP 050896

TN760E Analog Tie Trunk Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/ SMPLX Option Switch	Set Prot/ Unprot Option Switch	Administered Port[1]
Circumstance	To	System	Far-End			
Collocated	Media Gateway	E&M Type 1 Compatible	E&M Type 1 Standard	E&M	Unprotected	Type 1 Compatible
Inter-Building	Media Gateway	Protected Type 1 Compatible	Protected Type 1 Standard Plus Protection Unit	E&M	Protected	Type 1 Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any system	E&M	Unprotected	Type 1

1. Adminster the items in this column on the Trunk Group screen.

Add Digital DS1 Tie Trunks and OPS

The TN2313 DS1 Tie Trunk, TN767B (or later) DS1 Interface, and TN464C (or later) DS1 Interface circuit packs provide connections to a 1.544-Mbps DS1 facility (T1) as 24 independent 64-kbps trunks and a 2.048-Mbps DS1 facility (E1) as 32 independent 64-kbps trunks.

NOTE:
Because adding DS1 tie-trunk service may require a service interruption, notify the customer in advance as to when you will be adding the circuit pack(s).

For information about administering DS1 Tie Trunks, refer to the *Administrator's Guide for the Avaya™ Communication Manager.*

Add TTC Japan 2-Mbit Trunk

The TN2242 Japan 2-Mbit trunk connects the media gateway to other vendor equipment in Japan as well as to other MultiVantage configurations through the Time Division Multiplexor (TDM).

Before physically installing the circuit pack, you need the assigned slot location (UUCSS), where UU is the media gateway (MCC1, SCC1) or port network number, C is the media gateway or carrier (MCC1), and SS is the slot location. The information is available from the person who adminstered the translations (most likely the software specialist). If not, you can find the information on the Trunk Group Status screen.

1. Get the trunk group number from the administrator.
2. Type **status trunk-group *number*** and press **Enter**.

```
status trunk 1

                          TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0001/001 13A0701  in-service/idle    no
0001/002 13A0702  in-service/idle    no
0001/003 13A0703  in-service/idle    no
0001/004 13A0704  in-service/idle    no
0001/005 13A0705  in-service/idle    no
0001/006 13A0706  in-service/idle    no
0001/007 13A0707  in-service/idle    no
0001/008 13A0708  in-service/idle    no
0001/009 13A0801  out-of-service
0001/010 13A0802  out-of-service
0001/011 13A0803  out-of-service
0001/012 13A0804  out-of-service
0001/013 13A0805  out-of-service
0001/014 13A0806  out-of-service
```

3. Install a TN2242 trunk circuit pack in the assigned slot.

4 Connect the H600-513 cable from the media gateway to the Time Division Multiplexor device.

5 To administer screens, refer to the *Administrator's Guide for the Avaya™ Communication Manager*

- For ISDN applications, see ISDN Service.
- For non-ISDN applications, see Managing Trunks.

Add CAMA/E911 Trunk

The Centralized Automatic Message Accounting (CAMA)/E911 feature requires the TN429C/D (or later) CO trunk circuit pack.

Port networks that include TN429C/D circuit packs used to connect to CAMA trunks require some Call Progress Tone Receiver (CPTR) resources to be either TN744D V2 or TN2182B circuit packs, since Touch Tone Receiver (TTR)/CPTR or General Purpose Tone Receiver (GPTR) resources are selected from the pool available in the port network when needed.

"Compatibility Tone Clock, TTR/CPTR, and GPTR Circuit Packs" on page 42 denotes which of these circuit packs are compatible and which are not affected.

Do the following tasks when adding CAMA/E911 trunks:

- "Installing the Circuit Pack" on page 42
- "Adding the Trunks" on page 43
- "Changing the Feature Access Code" on page 44
- "Changing the ARS Digit Analysis" on page 45
- "Changing the Route Patterns" on page 46
- "Changing the CAMA Numbering and Class of Restriction" on page 47

Compatibility Tone Clock, TTR/CPTR, and GPTR Circuit Packs

Circuit Pack	Description	Compatibility with CAMA Trunks in Same PN	Application	Notes
TN744D,V2 TN744E,V1	Call Classifier - Detector	Not Compatible	Used globally	8 GPTR/call classification ports. Use TN744D, V2 (or later) if CAMA feature is to be supported.
TN744D,V2 TN744E,V1	Call Classifier - Detector	Compatible	Used globally	8 GPTR/call classification ports. Required in PN supporting CAMA trunks if GPTR resources are required in excess of those on the TN2182BV2 (or later). Also required (if the TN768 or TN780 tone clocks are used) in place of TN748.
TN748C/D	Touch Tone Detector / Call Progress Tone Detector	Not Compatible	Used in the U.S. and a few other countries	4 TTR and 2 CPTR ports. Use TN744D, V2 or later if CAMA feature is to be supported.
TN780	Tone Clock	Not Affected	Used in the U.S. (infrequently) for Stratum 3 clocking and used in many other countries	Tone clock only, no TTR/CPTR functionality. Typically found with TN748 circuit packs in the U.S. Use TN744D, V2 or later if CAMA feature is to be supported.
TN2182B/C	Tone Detector/ Tone Generator/ Call Classifier	Compatible	Used globally	Tone clock plus 8 GPTR/call classification ports. Use TN2182B if CAMA feature is to be supported.

Installing the Circuit Pack

1 Insert the TN429C or later CO trunk circuit pack in any available port slot. Be sure the TN744D Call Classifier/Detector circuit pack is Vintage 2 or later or use the TN744E.

2 Connect the CAMA trunk to the Main Distribution Field (the trunk from the CO). Refer to the Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) in the job aid titled *Connector and Cable Diagrams (Pinout Charts)*. PDF

Adding the Trunks

NOTE:
So that this trunk group does not get buried within the other trunk groups, use a distinctive trunk group number such as 99.

1 Type **add trunk 99** and press **Enter**.

```
add trunk 99                                              Page 1 of 11

                                TRUNK GROUP

Group Number: 1                   Group Type: cama      CDR Reports: y
  Group Name:  cama Trunk Group - E911  COR: 1     TN: 1       TAC: 701
   Direction: outgoing     Outgoing Display? y CESID I Digits Sent: 0
                             Busy Threshold: 99

ESID I Digits Sent: 0
                             Busy Threshold: 99

TRUNK PARAMETERS
         Trunk Type: wink-start
 Outgoing Dial Type: r1mf
  Trunk Termination: rc
```

2 In the `Group Type` field, type **cama**.

3 In the `Group Name` field, type the desired name.

4 In the `TAC` field, type the desired trunk access code.

5 In the `Outgoing Display` field, type **y**.

6 In the `CESID I Digits Sent` field, type the number directed by the Central Office (CO) or the Public Safety Answering Point (PSAP).

Go to the Administrable Timers screen. You may need to adjust these fields according to your CO.

```
add trunk 99                                              Page 3of 11


                              TRUNK GROUP

ADMINISTRABLE TIMERS

                                     Outgoing Disconnect (msec): 400
                                Cama Outgoing Dial Guard (msec): 75
                                    Outgoing Glare Guard (msec): 1000

                                    Cama Wink Start Time (msec): 5000
 Outgoing End of Dial (sec): 1    Outgoing Seizure Response (sec): 4
                                    Disconnect Signal Error (sec): 30
```

7 Go to the Group Member Assignments screen.

```
add trunk 99                                                Page 5of 11

TRUNK GROUP

                                        Administered Members (min/max):  1/2
GROUP MEMBER ASSIGNMENTS                    Total Administered Members:  2
     Port   Code   Sfx  Name

 1: 01C0401 TN429   C
 2: 01C0402 TN429   C
 3:
 4:
 5:
 6:
 7:
 8:
 9.
 10:
 11:
 12:
 13:
```

8 In the `Port` field, add the trunk members.

9 Press **F3** when finished to submit the form and effect the changes.

Changing the Feature Access Code

1 Type **change feature-access-code** and press **Enter**.

```
change feature-access-code                                  Page 1 of 5

                                FEATURE ACCESS CODE (FAC)
           Abbreviated Dialing List1 Access Code: ____
           Abbreviated Dialing List2 Access Code: ____
           Abbreviated Dialing List3 Access Code: ____
  Abbreviated Dial - Prgm Group List Access Code: ____
                        Announcement Access Code: ____
                         Answer Back Access Code: ____
       Auto Alternate Routing (AAR) Access Code: ____
       Auto Route Selection (ARS) Access Code 1: 9___  Access Code 2:
                  Automatic Callback Activation: ____  Deactivation:
   Call Forwarding Activation Busy/DA: ____  All: ____  Deactivation:
                           Call Park Access Code: ____
                         Call Pickup Access Code: ____
  CAS Remote Hold/Answer Hold-Unhold Access Code: ____
                    CDR Account Code Access Code: ____
                                  Change Coverage: ____
                    Data Origination Access Code: ____
                        Data Privacy Access Code: ____
                Directed Call Pickup Access Code: ____
      Emergency Access To Attendant Access Code: ____
            Extended Call Fwd Activate Busy D/A: ____  All: ____   Deactivation:
                Facility Test Calls Access Code: ____
                             Flash Access Code: ____
```

2 In the `Auto Route Selection (ARS) Access Code 1:` field, administer the ARS access code and press **Enter**. In the example above, it is **9**; it must match the dial plan.

Changing the ARS Digit Analysis

1 Type **change ars analysis *number*** and press **Enter.** The example uses the number 9. .

```
change ars analysis 9                                          Page 1 of 1

                          ARS DIGIT ANALYSIS TABLE
                        Partitioned Group Number:  _     Percent Full:    ___


     Dialed      Total  Rte Call Nd  ANI      Dialed      Total  Rte Call Nd ANI
     String      Mn Mx  Pat Type Num  Rq       String      Mn Mx  Pat Type Num Rq
9_________________ 7_ 7_  2__ hnpa ___ n _________________ __ __ ___ ____ ___ _
976_______________ 7_ 7_  den hnpa ___ n _________________ __ __ ___ ____ ___ _
11________________ 2_ 2_  11_ emer ___ n _________________ __ __ ___ ____ ___ _
911_______________ 3_ 3_  12_ emer ___ n _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
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_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
```

2 In the `Dialed String` field, in the first empty row, type **11**.

3 In the `Total Mn` field, type **2**.

4 In the `Total Mx` field, type **2**.

5 In the `Rte Pat` field, type the desired Route Pattern (in the example, the route pattern is 11).

NOTE:
For the following step, if you are using the Attendant Crisis Alerting feature, type **alrt** instead of emer.

6 In `Call Type` field, enter **emer**.

7 On the next empty row, in the `Dialed String` field, type **911**.

8 In the `Total Mn` field, enter **3**.

9 In the `Total Mx` field, enter **3**.

10 In the `Rte Pat` field, type the desired Route Pattern (in the example, the route pattern is 12).

NOTE:
For the following step, if you are using the Attendant Crisis Alerting feature, type ***alrt*** instead of “emer.”

11 In the `Call Type` field, enter **emer** and press **Enter.**

Changing the Route Patterns

1 Type **change route-pattern *number*,** the route pattern to be changed, and press **Enter**. In the example, the route pattern is 11.

```
change route-pattern 11                                          Page 1 of X
                             Pattern Number: 11

   Grp.  FRL NPA Pfx Hop Toll No. Del Inserted                          IXC
   No.           Mrk Lmt List Digits  Digits
1: 99_   0  ___  _  __   __    __    _9_____________________________ user
2: ___   _  ___  _  __   __    __    _____________________________ user
3: ___   _  ___  _  __   __    __    _____________________________ user
4: ___   _  ___  _  __   __    __    _____________________________ user
5: ___   _  ___  _  __   __    __    _____________________________ user
6: ___   _  ___  _  __   __    __    _____________________________ user

     BCC VALUE  TSC CA-TSC   ITC  BCIE Service/Feature           Numbering LAR
     0 1 2 3 4 W    Request                                      Format
 1: y y y y y n  y none_____ both ept  outwats-bnd____ BAND: ___ _________  none
 2: y y y y y n  n           rest      _________________          _________  next
 3: y y y y y n  n           rest      _________________          _________  rehu
 4: y y y y y n  n           rest      _________________          _________  none
 5: y y y y y n  n           rest      _________________          _________  none
 6: y y y y y n  n           rest      _________________          _________  none
```

2 In the `Grp. No.` field, enter the CAMA trunk group number.

3 In the `FRL` field, enter **0**.

NOTE:
For the following step, if the service provider's Central Office (CO) wants KP11ST as the dialed digit string, then leave it blank. If the CO wants KP911ST, then type **9** in the `Inserted Digits` field.

4 Administer the `Inserted Digits` field if needed and press **Enter**.

5 Type **change route-pattern *number***, the route pattern to be changed, and press **Enter**. In the example, the route pattern is 12.

```
change route-pattern 12                                        Page 1 of X
                          Pattern Number: 12

   Grp.  FRL NPA Pfx Hop Toll No. Del Inserted                        IXC
   No.           Mrk Lmt List Digits  Digits
1: 99_   0  ___  _  __   __    1_    ________________________________ user
2: ___   _  ___  _  __   __    __    ________________________________ user
3: ___   _  ___  _  __   __    __    ________________________________ user
4: ___   _  ___  _  __   __    __    ________________________________ user
5: ___   _  ___  _  __   __    __    ________________________________ user
6: ___   _  ___  _  __   __    __    ________________________________ user

     BCC VALUE  TSC CA-TSC   ITC  BCIE Service/Feature          Numbering LAR
    0 1 2 3 4 W    Request                                      Format
1: y y y y y n  y none_____ both ept  outwats-bnd____ BAND: ___ ________  none
2: y y y y y n  n          rest      ________________           ________  next
3: y y y y y n  n          rest      ________________           ________  rehu
4: y y y y y n  n          rest      ________________           ________  none
5: y y y y y n  n          rest      ________________           ________  none
6: y y y y y n  n          rest      ________________           ________  none
```

6 In `Grp. No.` field, type the CAMA trunk group number.

7 In the `FRL` field, type **0**.

NOTE:
For the following step, if the service provider's Central Office (CO) wants KP911ST as the dialed digit string, then leave blank. If the CO wants KP11ST, then delete one digit.

8 Administer `No. Del Digits` field, if needed.

9 Press **F3** to submit the screen and effect the changes.

Changing the CAMA Numbering and Class of Restriction

1 Type **change cama-numbering** and press **Enter**.

```
change cama-numbering                                          Page 1 of 3
                        CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100______

Ext  Ext                  Total        Ext  Ext                  Total
Len  Code      CESID      Length       Len  Code      CESID      Length
 4_  101__  5381234_____    7_          __  _____  ___________    __
 4_  1____  555_________    7_          __  _____  ___________    __
  __  _____  ____________    __          __  ______ ___________    __
 __  _____  ____________    __          __  ______ ___________    __
 __  _____  ____________    __          __  ______ ___________    __
 __  _____  ____________    __          __  ______ ___________    __
 __  _____  ____________    __          __  ______ ___________    __
```

2 Type in your own system default in the `System CESID Default:` field.

This is the number the 911 operator sees when the extension code is not found in the CAMA Numbering table.

3 In the `Ext Len`, `Ext Code`, `CESID`, and `Total Length` fields, fill out to your own CAMA numbering plan. Be sure to cover all extensions.

4 Press **F3** to submit the screen and effect the changes.

5 Type **change cor *number*** (the class of restriction [COR] to be changed) and press **Enter**.

```
change cor 10                                              Page 1 of 3
                        CLASS OF RESTRICTION

                COR Number: 10
            COR Description: supervisor

                         FRL: 0                                 APLT? y
  Can Be Service Observed? n            Calling Party Restriction: none
Can Be A Service Observer? n              Called Party Restriction: none
        Time of Day Chart: 1         Forced Entry of Account Codes? n
         Priority Queuing? n                  Direct Agent Calling? n
     Restriction Override: none        Facility Access Trunk Test? n
     Restricted Call List? n                  Can Change Coverage? n
   Unrestricted Call List?
             Access to MCT? y              Fully Restricted Service? n
  Category For MFC ANI:    7              Hear VDN of Origin Annc.? n
          Send ANI for MFE? n_             Add/Remove Agent Skills? n
Hear System Music on Hold? y   PASTE (Display PBX Data on Phone)? n
 Automatic Charge Display? n
                          Can Be Picked Up By Directed Call Pickup? n
                                       Can Use Directed Call Pickup? n
```

6 Change all CORs that are defined for stations to remove any calling party restrictions for 911 calls.

7 Type **none** in the `Calling Party Restriction:` field.

8 Press **F3** to submit the screen and effect the changes.

9 Type **save translations** and press **Enter** to take all translation information in memory and write it to the hard drive.

Add ISDN—PRI

North American

1 Install a TN767E (or later) DS1 or a TN464GP DS1/E1 circuit pack for a signaling link and up to 23 ISDN—PRI Trunk Group members.

2 If the port network does not have a TN2312AP IPSI circuit pack, install a TN2182 Tone-Clock circuit pack to provide synchronization for the DS1 circuit pack.

International

1. Install a TN464GP DS1/E1 circuit pack for the assignment of the 2 signaling channels and up to 30 ISDN — PRI Trunk Group members. Each E1 span provides 32 ports.
2. If the port network does not have a TN2312AP IPSI circuit pack, install a TN2182 Tone-Clock circuit pack to provide synchronization for the DS1/E1 circuit pack.

Add Circuit Packs

Before physically installing the circuit pack, you need the assigned slot location (UUCSS), where UU is the media gateway (MCC1, SCC1) or port network number, C is the media gateway or carrier (MCC1), and SS is the slot location. The information is available from the person who adminstered the translations (most likely the software specialist). If not, you can find the information on the Trunk Group Status screen.

1. Get the trunk group number from the administrator.
2. Type **status trunk-group *number*** and press **Enter**.

```
status trunk 1

                           TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                    Busy

0001/001 13A0701  in-service/idle    no
0001/002 13A0702  in-service/idle    no
0001/003 13A0703  in-service/idle    no
0001/004 13A0704  in-service/idle    no
0001/005 13A0705  in-service/idle    no
0001/006 13A0706  in-service/idle    no
0001/007 13A0707  in-service/idle    no
0001/008 13A0708  in-service/idle    no
0001/009 13A0801  out-of-service
0001/010 13A0802  out-of-service
0001/011 13A0803  out-of-service
0001/012 13A0804  out-of-service
0001/013 13A0805  out-of-service
0001/014 13A0806  out-of-service
```

3. Install the DS1 Interface circuit pack in the assigned slot.
4. Install a Tone Detector circuit pack, if required.

Connect Cables

1. Install and connect cables from the TN464GP to the Main Distribution Field as required.

Administer the Circuit Pack

1. Administer the screens listed under ISDN Trunk Group and Trunk Group screens described in the Screen Reference chapter in the *Administrator's Guide for the Avaya™ Communication Manager.*

Resolve Alarms

1. Type **display alarms** and press **Enter**.
2. Examine the alarm log. Resolve any alarms that may exist using the appropriate maintenance documentation.

Save Translations

1. Type **save translation** and press **Enter** to take all translation information in memory and write it to the hard drive.

Add TN1654 DS1 Converter (Multi-Connect only)

The TN1654 DS1 converter circuit pack is used to connect a remote port network to a central port network connected to a center stage switch (CSS). You must install a DS1 converter in both the central and remote PN. The central PN must be an MCC1 media gateway; however, the remote PN may be a stack of SCC1 media gateways.

The TN1654 DS1 converter supports from 1 to 4 T1 (24 channel) or E1 (32 channel) facilities.

Do the following tasks when adding a TN1654 DS1 converter:

- “Set Circuit Pack Switches” on page 51
- “Installing and Cabling the TN1654 Circuit Pack (T1 only)” on page 54
- “Installing a 75-ohm E1 Interface Adapter” on page 59

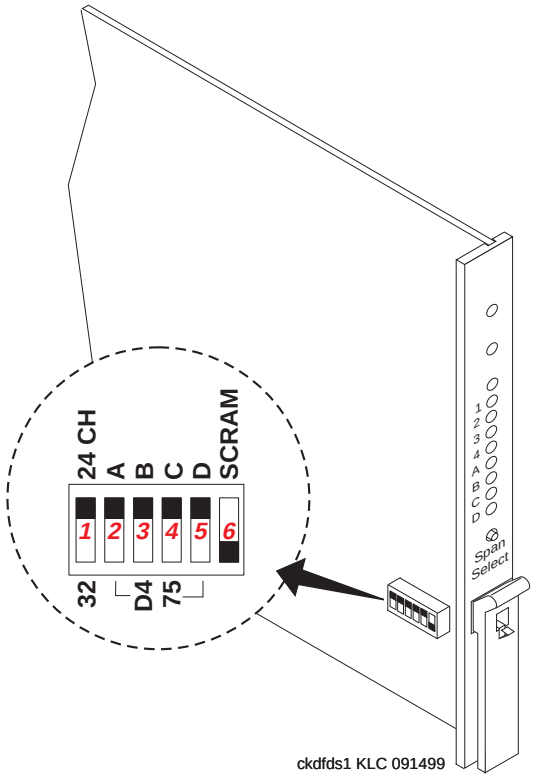
Set Circuit Pack Switches

The configuration switches on the TN1654 must be set before the circuit pack is installed. The TN1654 can be configured for either T1 or E1 operation. All 4 facilities on the circuit pack are configured as a group. It is not possible to have T1 and E1 facilities supported on the same circuit pack at the same time.

The T1 line impedance is fixed at 100 ohms, and the T1 framing is selectable for ESF (Extended Super Frame) or D4 for each facility. The E1 facility line supports termination impedances of 120 ohms for twisted-pair and 75 ohms for coax wiring.

“DS1 Converter Circuit Pack Switches” on page 52 shows the location of the switches. “TN1654 DS1 Converter Switch Functions” on page 52 and “TN1654 DS1 Converter Switch Settings” on page 53 show the switch-setting functions and positions, respectively.

DS1 Converter Circuit Pack Switches



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TN1654 DS1 Converter Switch Functions

Switch	Function
1	Type of Facility
2	Span A Line Impedance (E1 Only) Span A Framing (T1 Only)
3	Span B Line Impedance (E1 Only) Span B Framing (T1 Only)
4	Span C Line Impedance (E1 Only) Span C Framing (T1 Only)
5	Span D Line Impedance (E1 Only) Span D Framing (T1 Only)
6	Force Fiber Data-Stream Scrambling

TN1654 DS1 Converter Switch Settings

	1	2	3	4	5	6
up	T1	120 ohms ESF	120 ohms ESF	120 ohms ESF	120 ohms ESF	Enabled
down	E1[1]	75 ohms D4	75 ohms D4	75 ohms D4	75 ohms D4	Disabled

1. Although the TN1654 circuit pack supports 75 ohms, use the 127A BALUN to convert the 120 ohms to 75 ohms rather than the switch settings.

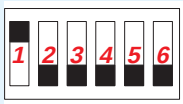
1. Set the configuration switches on the TN1654 as required per site.
2. Set Switch 6 down (disabled).

   Switch 6 may not be present (or active) on all TN1654 DS1 Converter circuit packs.
3. Set Switch 1 up for T1 facilities.

   All subsequent facility switch settings (Switches 2-5) reflect T1 framing on each of the 4 facilities. See “Examples of typical settings” on page 53.
4. Set Switch 1 down for E1 facilities.

   All subsequent facility switch settings (Switches 2-5) reflect E1 impedance on each of the 4 facilities. See “Examples of typical settings” on page 53 for examples.

Examples of typical settings

Switch Settings	Description
swdft1es KLC 092799	T1 ESF Span A through D Framing set for ESF
 swdft1d4 KLC 092799	T1 D4 Span A through D Framing set for D4
swdfe1es KLC 092799	E1 120 ohms ESF Span A through D Line Impedance set for ESF

Installing and Cabling the TN1654 Circuit Pack (T1 only)

The TN1654 circuit pack are normally installed in the Switch Node Carrier on the central port network (PN), which is in an MCC1 media gateway. However, if you have more than 2 remote PNs or you are installing the circuit pack in the remote PN, then you install them in a port carrier in the media gateway. The remote PNs can be SCC1 media gateways.

The installation instructions are provided as examples only.

NOTE:
Be sure to label all of the cables as they are installed.

Installing the circuit pack(s) in a Switch Node Carrier

You can install up to 2 TN1654 circuit packs in a Switch Node Carrier. If you need to install more than 2, install them in a port carrier.

CAUTION:
When adding or replacing any hardware and associated cables and adapters, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

CAUTION:
Install the TN1654 circuit pack in either slot 1 or slot 21. Installing it in any other slots can damage the circuit pack and the media gateway. Do *not* do it.

1. Install the TN1654 circuit pack in either slot 1 or 21 of the Switch Node Carrier close to a TN573B SNI circuit pack.
2. On the backplane, connect a 14-inch (36 centimeter) Y cable from the TN1654 circuit pack to the TN573B circuit pack. For a connectivity diagram see “DS1 Converter Connections — Part 1” on page 55.

NOTE:
The Y cable used with the TN1654 circuit pack is different than the Y cable used with the old TN574 DS1 converter circuit pack. These cables are NOT interchangeable.

3. Connect an H600-348 Quad cable to the other side of the Y cable.

If you go through a T1 line and out through the public network to a remote PN, FCC rules require that you install a Channel Service Unit (CSU). Go to “Connecting through a Channel Service Unit” on page 56.

DS1 Converter Connections — Part 1

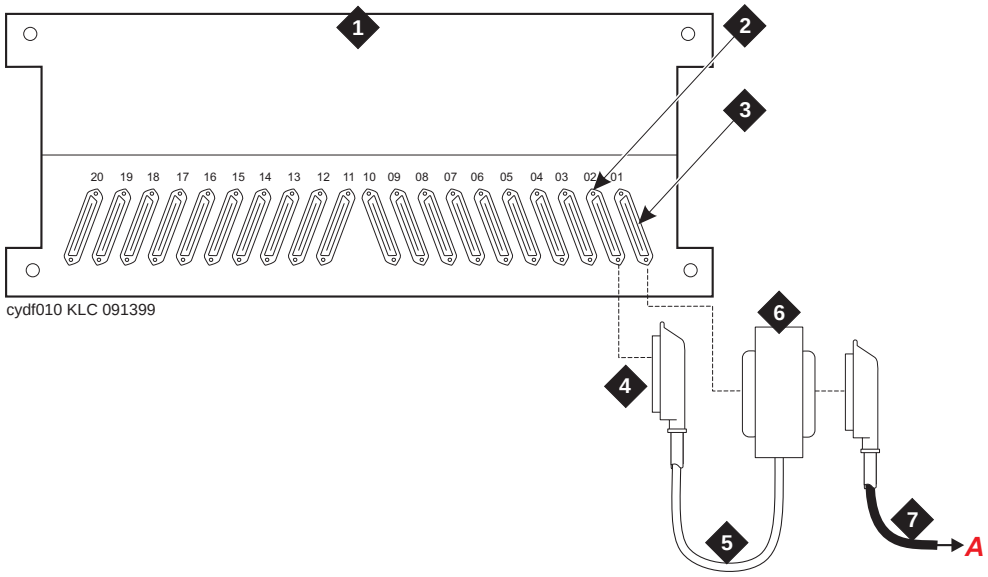


Figure notes

1. Port carrier/media gateway
2. Backplane connector for TN570D EI
3. Backplane connector for TN1654 DS1 Converter
4. 50-pair female connector to EI connector
5. 14-in. (35.6 cm) Y cable
6. 50-pin male/50-pin female double-headed connector
7. H600-348 Quad Cable (with 50-pin male connector), which connects the Y cable to the 4 CSUs, if used.

Installing the circuit pack(s) in a port carrier

You install the TN1654 circuit packs in a port carrier in either an MCC1 or SCC1 media gateway in the remote PN or in the central PN if the 2 slots in SNI are already used.

CAUTION:
When adding or replacing any hardware and associated cables and adapters, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

1. Install the TN1654 circuit pack in any slot in a port carrier close to a TN570D Expansion Interface circuit pack.
2. On the backplane, connect a 14-inch (35.56 cm) Y cable from the TN1654 circuit pack to the TN570D circuit pack. See “DS1 Converter Connections — Part 1” on page 55.

NOTE:
The Y cable used with the TN1654 circuit pack is different than the Y cable used with the old TN574 DS1 converter circuit pack. These cables are NOT interchangeable.

3 Connect an H600-348 Quad cable to the other side of the double-headed Y cable.

If you go through a T1 line and out through the public network to a remote PN, FCC rules require that you install a Channel Service Unit (CSU). Go to "Connecting through a Channel Service Unit" on page 56.

Connecting a Port Carrier to a Switch Node Carrier

When the TN1654 circuit pack is in a port carrier and the TN573B Switch Node Interface circuit pack is in the Switch Node Carrier, connect the two circuit packs with a 70-inch (178 centimeter) Y Cable.

NOTE:
The Y cable used with the TN1654 circuit pack is different than the Y cable used with the TN574 circuit pack. These cables are NOT interchangeable.

1 Connect an H600-348 Quad cable to the other side of the Y cable.

Connecting through a Channel Service Unit

FCC rules require that you install a Channel Service Unit (CSU) at both ends if you go through a T1 line and out through the public network to a remote PN. You need 1 CSU for each T1 or E1 facility up to 4.

"DS1 Converter Connections for T1 Service — Part 2" on page 57 shows a typical connection for a T1 line, and "DS1 Converter Connections for 120-ohm E1 Service — Part 2" on page 58 shows a typical connection for an E1 line.

NOTE:
You may need an adapter cable to connect the H600-348 cable to the CSU (see "Adapter Descriptions" on page 58).

1 Connect the H600-348 Quad Cable to the DTE jacks on each CSU.

2 Connect one end of the H600-383 cable to the network jack on the CSU and the other end to the smart jack.

DS1 Converter Connections for T1 Service — Part 2

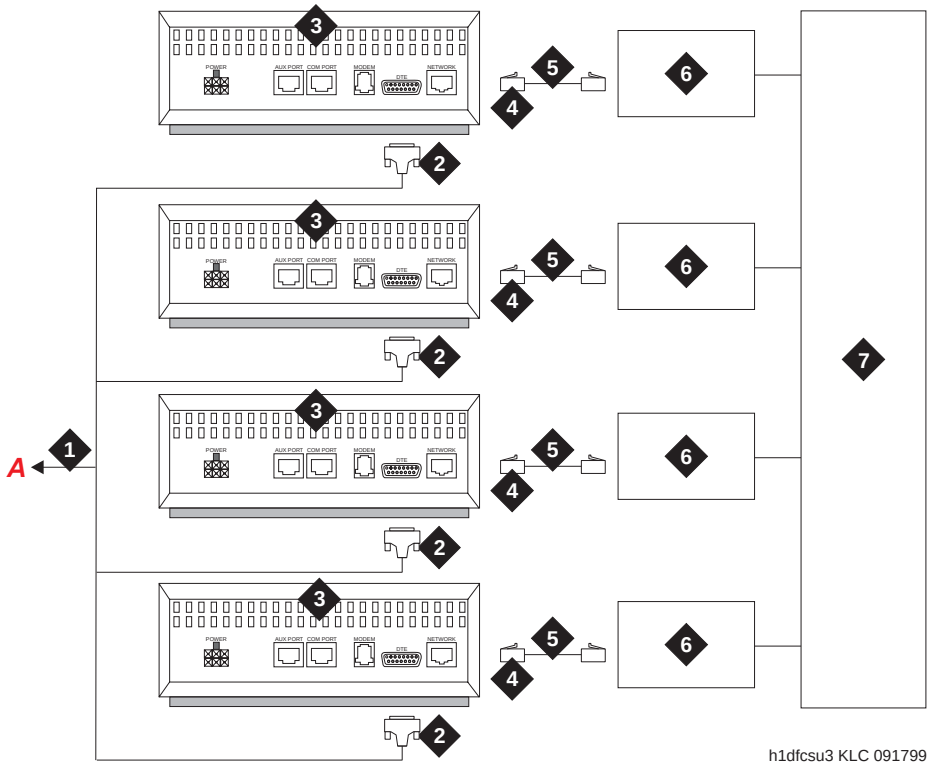


Figure notes

1 H600-348 Quad Cable

2 15-Pin Male D Connectors (to DTE Jacks on CSU)

3 Channel Service Unit (CSU)

4 H600-383 Cable Connector (RJ-48C to RJ-48C)

5 Network Interface cable

6 700A Loopback Jack

7 Cables

DS1 Converter Connections for 120-ohm E1 Service — Part 2

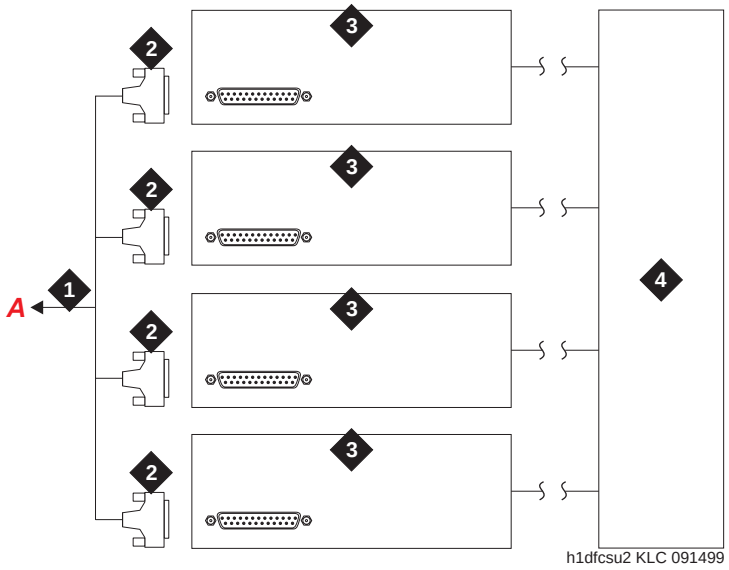


Figure notes

1 H600-348 Quad Cable

2 15-pin male D connectors (to DTE jacks on customer-provided network-interface equipment)

3 Customer-provided network-interface equipment

4 Network interface cable

Adapter Descriptions

Type	Color	Description
Straight through	Black	Cable with a DB15 connector on one end and an RJ48 connector on the other
Rollover	Gray	Cable with a DB15 connector on one end and an RJ48 connector on the other
Null	Black	A DB15M to DB15F rollover/null adapter.

Connection to the remote PN is the same as that shown in “DS1 Converter Connections — Part 1” on page 55 and “DS1 Converter Connections for T1 Service — Part 2” on page 57.

“Y Cable Lengths” on page 59 shows the Y cable lengths.

Y Cable Lengths

Length	Description
14 in. (35.6 cm)	TN1654 circuit pack to adjacent EI circuit pack or TN573B SNI circuit pack in same carrier
70 in. (178 cm)	TN1654 circuit pack to EI circuit pack or SNI circuit pack in another carrier
14 in. (35.6 cm)	TN1654 circuit pack to fiber optic transceiver (DC-powered cabinets only). This cable is for intercabinet cabling only.

NOTE:
The distinction between facility types is important when using TN1654 circuit packs. The facility used to carry control channel messages between the pair of DS1 converter circuit packs and all packet traffic is known as the primary facility. The facility used to backup and takeover for the primary facility in the event of primary facility failure is known as the secondary facility. The TN1654 allows either facility, A or B, to be a primary channel. The control channel is restricted to only the A or B facilities. This permits full 24-channel access (T1) or 31-channel access (E1) for facilities C and D to support user traffic.

Installing a 75-ohm E1 Interface Adapter

For certain markets with 75-ohm E1 service, the TN1654 DS1 converter requires an adapter to convert the 120 ohms to 75 ohms. See “127A BALUN Coaxial Adapter” on page 60.

NOTE:
Although the TN1654 DS1 converter supports 75 ohms, use the 127A BALUN to convert the 120 ohms to 75 ohms rather than the switch settings.

“DS1 Converter Connections for E1 75-ohm Service — Part 2” on page 61 shows a typical connection.

127A BALUN Coaxial Adapter

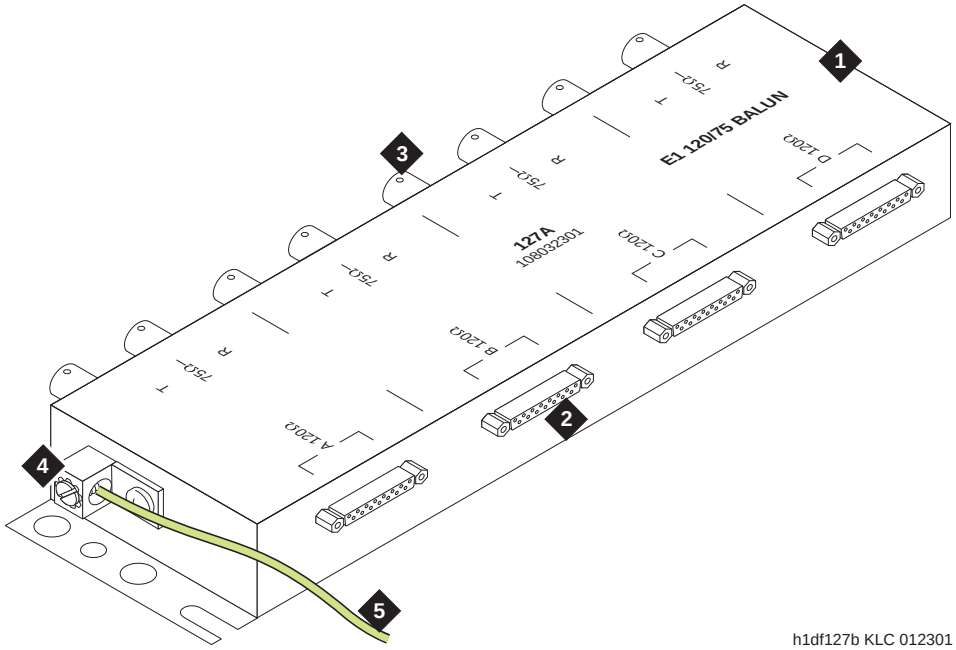


Figure notes

1 127A BALUN coaxial adapter

2 Connect to quad cable (H600-348 or similar)

3 BCN Connections to E1 network equipment

4 Single-point ground connection

5 18 AWG (0.75 mm^2) ground wire to ground terminal at MDF

DS1 Converter Connections for E1 75-ohm Service — Part 2

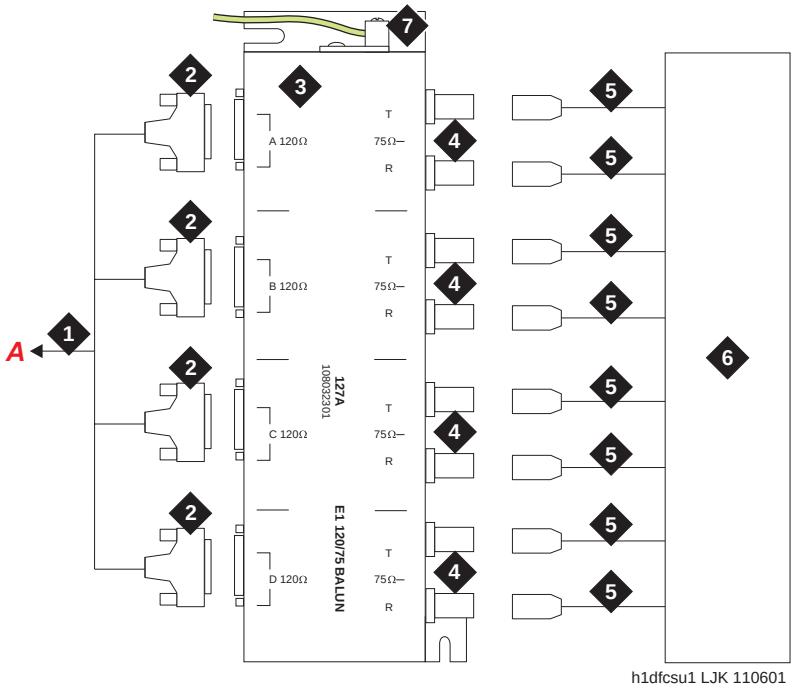


Figure notes

1	H600-348 quad cable	**5**	E1 network connection
2	15-pin male D connectors	**6**	Network interface
3	127A BALUN coaxial adapter	**7**	18 AWG (0.75 mm^2) ground wire to ground terminal at MDF
4	BNC connectors (transmit/receive) corresponding to each facility		

Mounting the 127A (TN1654 DS1 Converter)

NOTE:
In Norway, Sweden, Denmark, and Finland, the 127A can be used only with MCCs or DC-powered SCCs.

1. Mount the 127A vertically near the main distribution frame (MDF). The 127A case has tabs for screw-mounting and cutouts for snap-mounting the unit in a 89-type mounting bracket.
2. Attach a ground wire (required) between the 127A and the MDF ground terminal bar. The wire must be green/yellow and no smaller than 0.75 mm^2 (18 AWG).
3. Strip both ends of an appropriate length of wire.
4. Insert one end of the wire into the MDF ground bar and secure.
5. Insert the other end into the screw-connection in the end of the 127A and secure. See “127A BALUN Coaxial Adapter” on page 60.

6 Connect the H600-348 quad cable to the 4 DB-15 connectors provided on the 127A adapter.

7 Connect the transmit connectors to the connectors marked T and the receiver connectors to the connectors marked R.

8 Connect the other end of the cables to whatever connects to the network.

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